

SERIA STAFF MOVEMENTS MANAGEMENT SYSTEM  
(SSMMS)

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## **ABSTRACT**

Attendance in any organization is very important to ensure the continuous operation. Aiming at the disadvantages of traditional punch card attendance system, SeRIA Staff Movements Management System (SSMMS) is proposed to Sekolah Rendah Ibnu Abbas (SeRIA), Kuantan. SSMMS is a system used to record the present of staffs to work and staffs leaves application. Assisted by the System Development Life Cycle (SDLC) methodology, the system has been built using the web-based applications such as PHP, MySQL and Apache to record attendance and report the presence of staff. This system will allow staff to record daily attendance, to apply for leave and they can see their profile and also leave application status, while the coordinator could see staff attendance reports and generate attendance reports. Headmaster will manage the application off either accept or reject the staff leave application. Additionally, SSMMS can reduce time and management cost. The implementation of this system will minimize the usage of conventional system and maximize the usage of computers in the organization. In conclusion, it is hope that this system could improve the management in the organization

## **ABSTRAK**

Kehadiran adalah amat penting bagi melancarkan perjalanan sesebuah organisasi. Menumpukan pada kelemahan sistem perakam waktu sedia ada, “SeRIA Staff Movements Management System” (SSMMS) telah di cadangkan kepada Sekolah Rendah Ibnu Abbas (SeRIA), Kuantan. SeSAMS digunakan untuk merekod masa kehadiran staf ke tempat kerja dan untuk memohon cuti bekerja. Dengan dibantu oleh metodologi “System Development Life Cycle” (SDLC), sistem itu telah dibina dengan menggunakan aplikasi berasaskan web seperti PHP, MySQL dan Apache untuk merekod kehadiran dan melaporkan kehadiran staf. Sistem ini akan membolehkan kakitangan untuk merekod kehadiran harian, memohon cuti dan mereka boleh melihat profil mereka dan juga status permohonan cuti, manakala koordinator boleh melihat laporan kehadiran staf dan menjana laporan kehadiran. Guru Besar akan menguruskan mengenai permohonan cuti samada menerima atau menolak permohonan cuti daripada staf. Selain itu, SSMMS boleh mengurangkan masa dan kos pengurusan. Pelaksanaan sistem ini akan mengurangkan penggunaan sistem konvensional dan memaksimumkan penggunaan komputer dalam organisasi. Kesimpulannya, ia berharap bahawa sistem ini boleh meningkatkan pengurusan dalam organisasi

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Project Background**

In the revolutionary era of information, globalization, and communication technologies has increase rapidly among countries around the world. In fact, information and communication technology are not the only part that affected by the revolutionary, thus the whole society in the world starting to move rapidly along with the development of technology resulting state of the world seemed limited.

Nowadays, the information technology and communication facilities have been applied in variety of management activities and on-line businesses such as ticketing, sales and purchases of goods, advice, and information search and many more. This service is to assist and facilitate the user to connect with the services easily, accurate and quick. Management and business activities can be implemented in a more systematic and flexible booking service and online application that has implemented at present.

Attendance can be defined as the action of being present at one place or event [1] for example present to somebody party or present to work in office. Attendance is one of the important factors in many institutions and organization that need to be followed by people [2]. In the previous implementation, there are various types of attendance systems that have been developed. For example, attendance systems by using punch card, using web-based, and also RFID. These implementations still can cause lots of problems such as providing incorrect information to the users.

SeRIA Staff Movements Management System (SSMMS) projects that will be develop involving online application for attendant and leave. This system will be implying to all staff in Sekolah Rendah Ibnu Abbas (SeRIA) Kuantan, Pahang Darul Makmur. In the modern era of development, the concept of space reservation can be implementing through variety of approaches that are more advanced and sophisticated compared to existing approaches which focus more on the use of paper as a formal or informal letters and pamphlets. Through the use of on-line, the

concept of information at their fingertips and can be practiced to reduce the cost for the use of paper.

SSMMS is a smart online attendance and leave management system that allows SK Ibnu' Abbas's (SeRIA) staff to check in and out for work and apply for their leave conveniently. For leave application, SSMMS designed with auto-routing for verify and verified, approval and approved leaves of online capabilities, making each level winds leave application volume for both applied and those who verify and approve. Which is, the user will apply the leave by choosing the type of leave and reason why they apply for leave, and then the system will calculate the leave balance of the staff, after that, the application will sent to secretary to verify it before it sent to Headmaster to approve or reject the application. So this will help the management to reduce the use a lot of papers and wasted time.

These applications also allow officer to view the staff's attendance and leaves history within one year. With this functionality, staff will know their working history for attendance and leave and can view how many leave they left for example rest leave.

## **1.2 Problem Statement(s)**

- i. SeRIA still using traditional punch card and manual leave application.

By using traditional punch card and manual leave application, it will use a lot of papers for example for punch card, every month must use the new card and for leave application, staff must fill the leave form every time they need to apply leave. For safety it is not secure because it still using filing system and if something likes natural disaster happen there is no backup for it.

- ii. Many processes of leave application require time and energy.

Staffs needs to get the leave form from office and then fill in all the information needed and then sent it to the clerk. Clerk will check if the staff's still has leave balance before accepted and sent to secretary for verification. Lastly the application will sent to Headmaster which is she will approve or rejected depends on some reason. This system will take a few days for staff to know their application is approved or rejected.

- iii. Hard to view staff attendance and leave record.

Staffs will hard to view back their attendance or leave record because all the record is keep by the clerk and they need to ask the clerk about their record history if there a case in the future such as run out of leave balance.

### 1.3 Objectives

SSMMS main purpose is to upgrade or improve the current system of recording attendance and manual apply for leave. There are several main objectives of this project will meet:

- i. To upgrade the current attendance and leave application record that is manually processed to online.
- ii. To improve the mechanism of receiving, approving and rejecting leave application through system.
- iii. To solve administrator problem on viewing attendance report.

### 1.4 Scope

System:

SSMMS is focus on record time in and out and leave application.

User:

- i. Administrator  
Will in charge the system management, register or delete user, view user information.
- ii. Staff  
To check in and check out the attendance system and can apply leave application.
- iii. Headmaster  
Can view staff information, approve or reject staff leave application.
- iv. Coordinator  
Will in charge to check the daily attendance report.

## **1.5 Project Significance**

SSMMS is the solution to the current punch card and manually apply leave system. This project will upgrade the attendance management system at SeRia due to the technologies application that enables the staff to use computer to punch card and applying leave.

The leave application process become smoother because staff no longer need to wait to punch card and apply for a leave. The attendance and leave record become more manageable because all the record is store into database. The database is easier to backup so no worries if something happen such as natural disaster or database corrupted.

In addition, the officer can see the presence information and leaves history in the manageable way. All of this can be achieve using SSMMS system because all the data will be store in the database and searching process will be faster than manual search.

## **1.6 Conclusion**

It is about the early identification of projects to be developed in which it uses the concept of online. Moreover, the background was also identified the problems to find a solution for the system to be developed based on a concept similar to the existing system. SSMMS goals are to produce systematic leave applications through the service. In addition, there are various objectives that can be implementing in all phases of project development. The main focus of developing the SSMMS is to overcome the weaknesses of the current punch card and leave application.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter describes a detailed study of selected projects. In this chapter there are two main parts to be discussed review on the current and the same system or other system to describe the techniques, methods, tools and technologies that will be available in the project. In the process of system development, literature review is conducted to gain more understanding about the theory, methods, and technologies related to the system that has been developed [3]. Background research organization and comparative studies of existing systems also performed to get better understand about the system before the system is developed.

#### **2.2 Current System**

Sekolah Rendah Ibnu' Abbas is still using manual systems for attendance and leave application, they have yet to have any computerized system, the existing system is a manual system is not user friendly because the need to carry out more than one job at a time such as get the form, fill in the form, sent it to clerk, clerk will check the leave balance before verify by Secretary and approve or reject by Headmaster. SeRIA still uses the traditional punch card to record their attendance to work. This will cause the duty officer difficult to get reports of the staff attendance immediately or to manage staff attendance records and also to avoid staff to help punching attendance for others. Problems will occur when the card is lost either intentionally or unintentionally, and not impossible to happen betrayal by someone

In addition, if all the work is done manually, including the calculation to generate the report is not impossible it could lead to miscalculation and contribute to repeat the work. In addition, work is still paper-based time management which means that everything and every detail will be done manually on paper. If there are cases such as the loss of a single record of it can lead to difficulties in generating reports at the end of the month or year. In addition to requesting leave, employees

must take and complete an application form if he wants to apply for leave and submit to their officer. It will take some time for officers to approve leave if the officer was too busy or off duty.

## **2.3 Existing System**

Nowadays, there are various types of attendance systems in the market. At present there are various types of systems in the market attendance. For example, time attendance system using RFID, mobile computing, mobile phones, and also traditional punch cards. Different approaches used in the different systems available. Some researchers have done on the existing attendance systems. Different approaches used in the different systems available. Some researchers have improved on the existing attendance systems. The purpose of this study is to understand what your strengths, weaknesses and problems in the existing system and to develop a better system than the current system to overcome the weaknesses found in the existing system. In this section, the existing system that has been developed previously related with attendance management system will be reviewed.

### **2.3.1 Attendance System by using Smart Card**

All systems will enable accurate attendance tracking staff hours attending schedule, or hours of activity daily and weekly contracts, ensure employees are paid accurately measured and correct. One of the attendance systems that required to using smart card is Aplus MyKad [4]. This system will record the staff time entry record to replace the traditional manual punch card. With this computerized system, it will provide a very easy but accurate way to keeping track of the staff attendance.

In Malaysia, MyKad is an official identification card for all Malaysian. MyKad can use as the tool to record time by putting MyKad into the Aplus Smart Card Reader and then the computer will immediately capture the staff individual information and time. But by using MyKad to record staff attendance has a shortage. This is because it will only can use by Malaysian and difficult for foreigner because they dint have Malaysian MyKad.

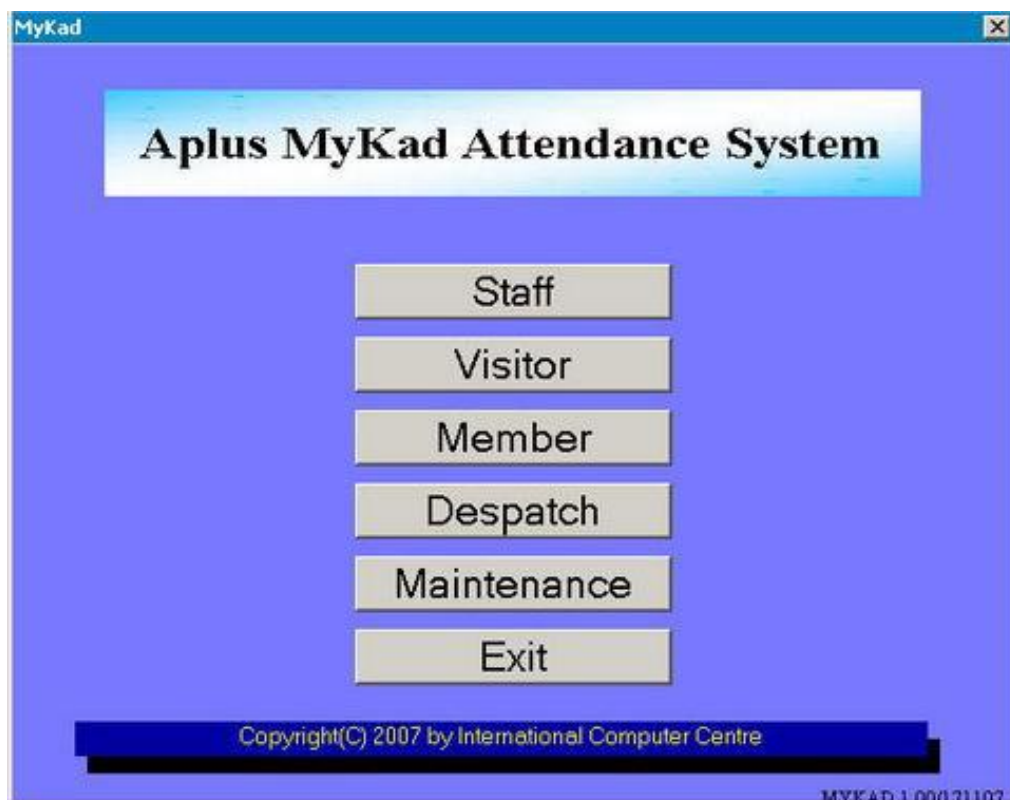


Figure 2.1: Main page for Aplus MyKad Attendance System

### 2.3.2 Attendance System by using Fingerprint

Fingerprints can be regarded as the oldest human characteristics of the most reliable and popular widely used to identify individuals and validation in the field of biometric technology. Fingerprint is unique because it is believed that cannot be more than one person will have the same pattern of fingerprint in this world [5].

FingerFlex [6] is system that using fingerprint biometric device for time attendance. FingerFlex helps to automate collection of data and the timesheets process faster. This system will prepare and generate the report of attendance faster. Moreover, it can avoid the buddy-punching and will improve the overall workforce punctuality on a company. Below are the main functions of FingerFlex Time Attendance System:

i. **One Touch Fingerprint Biometric Time Clock**

FingerFlex Time Attendance will identify staff clocking in and clocking out just by the staff fingerprint and no need any password validation.

ii. **Flexible Schedule Management**

The system is also able to manage the work and time needed changes. FingerFlex can fulfill all time management needs and manage the different working hours for different groups.

iii. **Flexible Leave Management**

With this feature, employees who take leave will be recorded in FingerFlex and will appear in the related report.

iv. **Generate Report**

All reports generated by FingerFlex can be exported to Microsoft Excel that can be used for wages calculation and to generate reports.



Figure 2.2: One-Touch Fingerprints Biometric Time Clock



### 2.3.3 Aquarius Soft BePunctual

Aquarius Soft BePunctual is an employee's time and attendance solution designed specifically to replace mechanical punch clock, punch cards and attendance book sign in / out process. With BePunctual, your manager will no longer have to spend hours calculating staff worked hours and pay. Employees can punch in / out either at the computer center located at the entrance of the office, or in multiple locations, or at their own office computer.

- i. Employee login  
For Customer Login page, staff will enter the username and password to log in the main page of the system.
- ii. Check in & Check Out  
Workers need to use their ID and password to check in and check out from the system. Information about time had been punch will be sent to database.

In the server module consist:

- i. Setting for Administration  
This feature was created to enable the administrator to manage the data in a systematic manner. Under the administration of the atmosphere there that leave management allows admins to set off information and the environment is to make the admin staff know the details of the employee. Give the schedule feature allows admins to arrange work schedules for employees.
- ii. Attendance Report  
This the list of reports that can to printed out:
  - Personal report
  - Attendance report
  - Leave report
  - General report

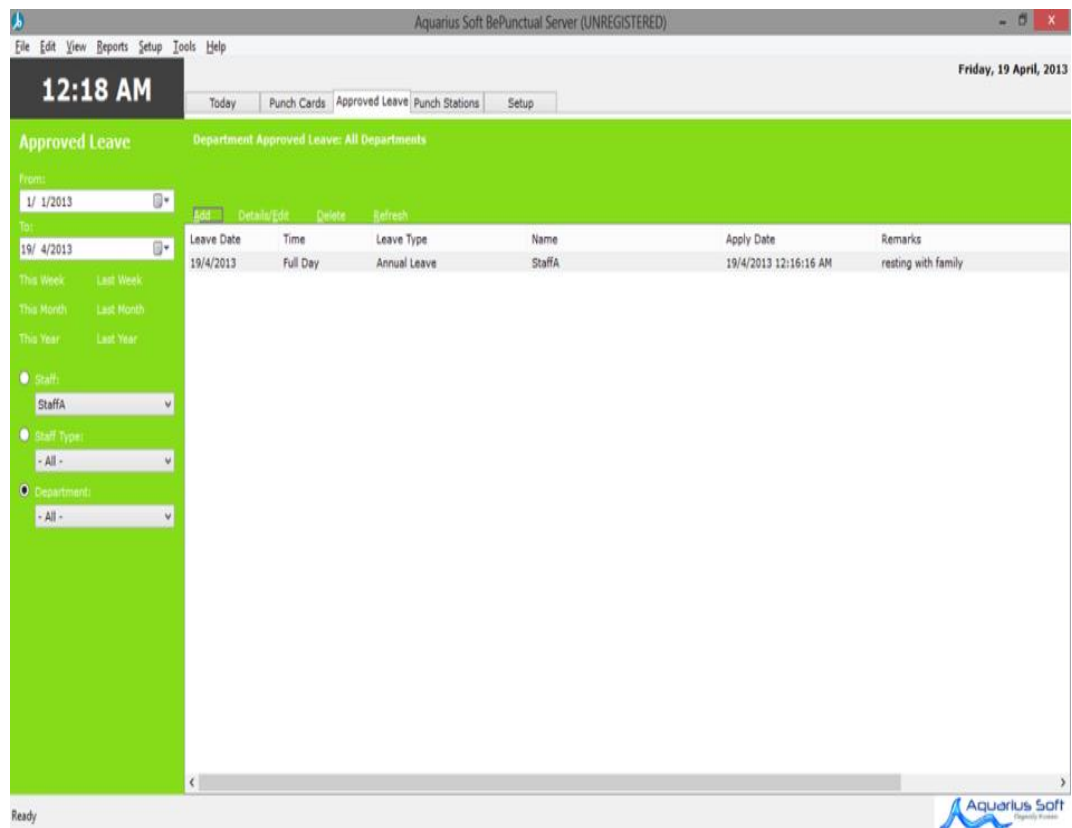


Figure 2.3: Aquarius Soft BePunctual leave application page.

## 2.4 ADVANTAGES AND DISADVANTAGES OF THE EXISTING SYSTEM

<b>Name of the System</b>	<b>Advantages of the System</b>	<b>Disadvantages of the System</b>
<b>Smart Card Attendance System</b>	<ul style="list-style-type: none"> <li>• Provide secure system and automatic attendance management for staff.</li> <li>• Less administration work.</li> </ul>	<ul style="list-style-type: none"> <li>• Will need more cost for the smartcard and biometric device.</li> </ul>
<b>Fingerprint Attendance System</b>	<ul style="list-style-type: none"> <li>• Save the time taken to record the attendance.</li> <li>• Accurate timing.</li> </ul>	<ul style="list-style-type: none"> <li>• Will need more cost for the fingerprint tool.</li> <li>• Need to correctly place the finger on the scanner to avoid no data detection.</li> </ul>
<b>Aquarius Soft BePunctual</b>	<ul style="list-style-type: none"> <li>• A web based system.</li> <li>• Can be accessed anywhere.</li> <li>• Attendance reports can be generated in real-time processing.</li> </ul>	<ul style="list-style-type: none"> <li>• Need connection of internet to make the access to the system possible.</li> <li>• User cannot update their profile.</li> <li>• Not provide button for cancelling leave application.</li> </ul>

Table 2.1: Differentiation between existing systems

## 2.5 Development Tools

Development tool is needed to develop this project. Adobe Dreamweaver is used to help designation and fixing web application interface. XAMPP used as a web server for this project. PHP was chosen as the programming language and MySQL as the database language.

### 2.5.1 Adobe Dreamweaver

Dreamweaver is the ideal tool for coders, web designers, and application developers of all levels. Web professionals of all experience levels will find a workspace arrangement to fit their style, or they can make one of their own. Dreamweaver user interface is both highly efficient and aesthetically pleasing.

We can use Dreamweaver to build a basic website using web technologies such as XHTML, CSS and JavaScript as well as a more complex website that combines server-side technologies such as ASP.Net, ColdFusion and PHP. It also allows us to create web database-driven websites and web admin to update and delete database records, login pages and server behaviour to restrict access to certain areas of our website. Dreamweaver is also very flexible development environment. Dreamweaver allows us to work in Code or Design view or have a split screen where we can do both. We make changes as design generate clean, standards-compliant code which we can modify the code as needed in view.

Most of the sites that we work on will have the sites linked to them as CSS style sheets and JavaScript files. Dreamweaver makes working with linked files such as easier by giving us access to them from the Related Files toolbar.

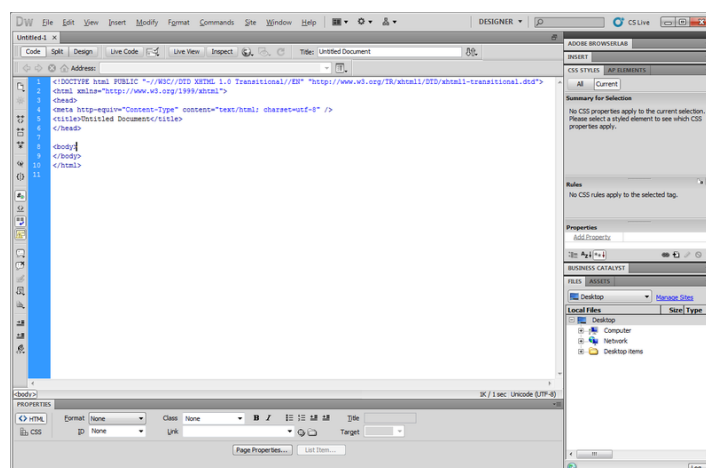


Figure 2.4: Windows Adobe Dreamweaver

## 2.5.2 XAMPP

Xampp is an open source web server solution stack is mostly known as a proficient tool that makes web development accessible even to beginners. Apache, MySQL and PHP components have been installed in Xampp. Additionally, Xampp also contains Perl programming language, database administration tool phpMyAdmin, FileZilla FTP server, mail server and JSP Tomcat server Mercury combined with cross-platform architecture makes it one of the most versatile and accessible.

Xampp face comes as a small Control Panel is very easy to understand from the beginning. The purpose of which does used Xampp no need a stylish appearance and as a result it does not have, but they need the functionality and it certainly has a lot of it.

Control panel lists Apache, MySQL, FileZilla and Mercury service alongside their status and buttons to start / stop them. Admin button provides advanced configuration options for each service. For example, one for Apache will open a page in our web browser consists of various types of information and settings for us to fiddle with, including the full report safety issues, documentation, PHP and Perl some samples to check if Xampp is working, access to phpMyAdmin and other tools that are useful.

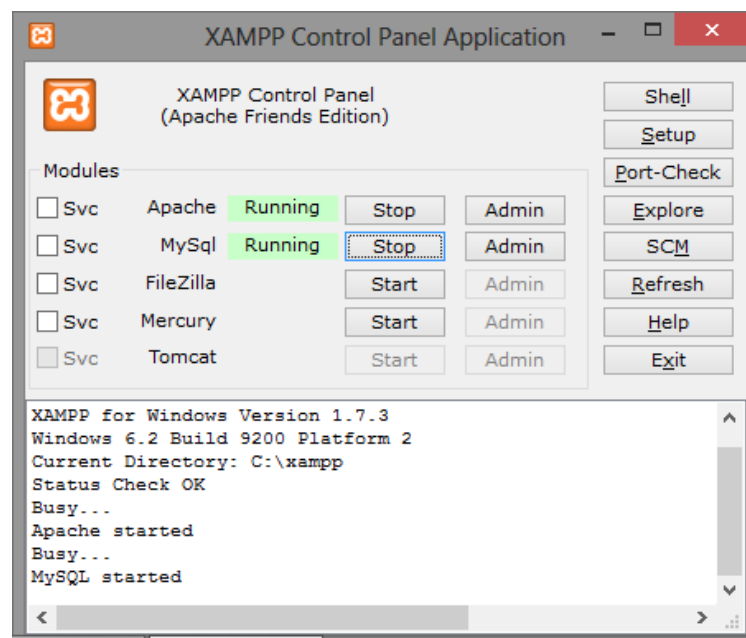


Figure 2.5: XAMPP

### **2.5.3 PHP**

PHP stands for Hypertext Pre-processor is a well-known programming languages used for web development and for developing dynamic websites. Most web developers today use PHP coding and this language has been a huge demand in the software industry due to its special features. It is an open source programming and can reduce the complexity of current programming.

### **2.5.4 MySQL**

MySQL is an open-source relational database management system. Database MySQL is a reliable and flexible management system very fast. It provides very high performance and it is multi-threaded users and various relational database management systems. MySQL is one of the most popular relations database management systems on the web. Database MySQL database has become the most popular open source world, because it is free and available on almost all platforms. The MySQL can run on Windows UNIX, and Mac OS. MySQL is used for Internet applications because it provides good speed and very safe. MySQL was developed to manage large amounts of data at very high speed to overcome the problems of existing solutions. MySQL can be used for applications honesty but it is mostly used for web applications on the internet.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Introduction**

Methodology is a set or system of methods, principles and rules for regulating a particular discipline, such as the arts or sciences. The method is an analysis of the principles, rules, and postulates employed by discipline. The method can also be a systematic study of methods, can be, or have been used in a particular discipline or procedure or set of procedures.

Method refers to more than a simple set of rules, rather it refers to rational and philosophical assumptions underlying a particular study. This is why scholarly literature often includes a section on research methodology. This section is not more than outline the research method.

#### **3.2 System Development Life Cycle (SDLC)**

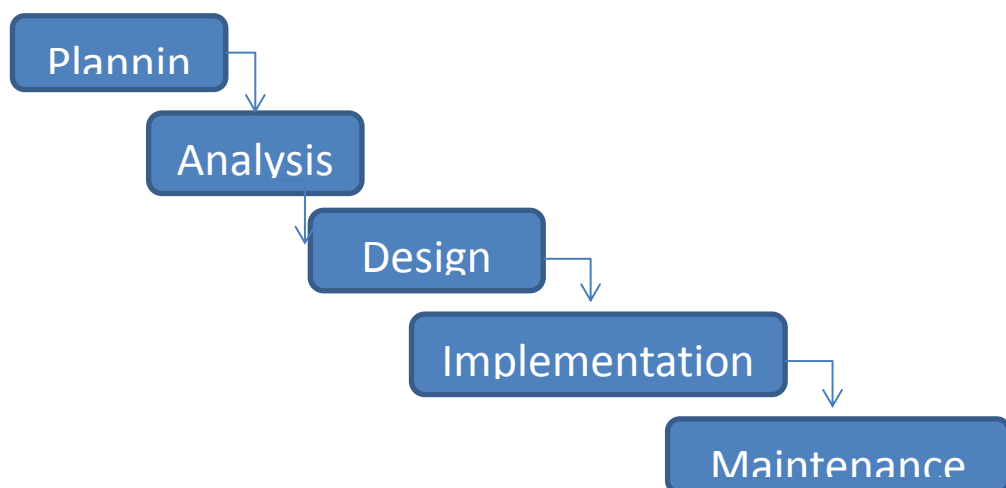
For SSMMS project SDLC (System Development Life Cycle) is used to develop this system describes an approach to produce a computer system through a waterfall model. Waterfall model is a software development model order (a process for creating software) in which development is seen as flowing steadily downwards (like a waterfall) through the phases of requirements analysis, design implementation, testing (validation), integration and maintenance.

To follow the waterfall model of the proceeds from one phase to the next in a purely sequential. For example, the first complete specification of the requirements set in stone. When these requirements are fully completed, one proceeds to design. The software is the design and plan of actions taken to implement (coders) to take this action and design an action plan to implement the given requirement.

Once the design is completed, an implementation of the designs made by coders. By the end of the implementation phase, the different software components developed by different teams are integrated.

After implementation and intergradations are complete, tested and debugged software products, any errors introduced in the early stages released here. Then the software product is installed, and then maintained to introduce new functionality and remove bugs.

In this project activity classifiable for 5 phases



System Development Life Cycle (SDLC)

Figure 3.1: SDLC Phase